Regulatory status:

 PCS operators should be given co-carrier status to LECs, and access to LEC switches should be based on "disaggregated equitably marginally based allocated cost." (p. 5).

Technical standards:

- The FCC should require PCS licensees to set operating and interference rules among themselves. (p. 4).
- All licensees should be allowed to share all the allocated PCS frequency. (p. 4).

COX ENTERPRISES, INC.

Reply Comments on 2 GHz Licensed PCS

Interest:

Cable television company tentatively granted a pioneer's preference

Band plan:

- Favors 40 MHz per licensee with access to a "spectrum reserve" because Cox's analysis of San Diego shows insufficient spectrum to launch PCS (attached as Ex. 1) (3-9).
- Cox's spectrum reserve proposal would allow access to all unused 1850-1990 MHz spectrum, gradually relinquished as microwave users are migrated (12-13).

Amount of spectrum per licensed system:

- Arguments for less than 40 MHz (largely by LECs and cellular companies) do not consider existing users; assume relocation will be easy; and fail to consider uneven distribution of existing users throughout the band (3).
- OPP's paper incorrectly assumes that all or most microwave licensees can be relocated; Cox's San Diego showing demonstrates that 40 MHz (with access to a reserve) is needed to obtain a clear 20 MHz (10).
- OPP's solution of 20 MHz with a 10 MHz cushion is insufficient to address the problem and its proposal to allow combining allocations simply imposes transaction costs on new licensees to obtain enough spectrum (11).
- PCS providers will be required to roll-out full function services with extensive coverage to succeed; this implies the need for large spectrum allocations (14-15).

Service areas:

- The majority of non-LEC, non-cellular commenters support MTA licensing, since MTAs represent communities of interest; are reasonable in light of regionalization in mobile services generally; will speed service; will provide system coverage desired by new entrants; generate economies of scope allowing service to be deployed in rural areas; will ease obtaining fair financing (15-20).
- Nationwide licensing suffers grave deficiencies, including restricting diversity; practically limiting eligibility due to financial considerations; and slowing service deployment. The purported benefits of national systems can be achieved in other ways (20-21).

Local exchange carrier participation:

LECs should be ineligible since LEC participation is inconsistent with the Commission's goal of encouraging competition with local exchange services; LEC arguments are self-serving; LECs do not require spectrum to participate in PCS (they will be involved in interconnection and transport); and LEC arguments regarding needing to participate in PCS to "level the playing field" are disingenuous given their dominant position (21-24).

Licensing policies:

• Cox remains convinced that comparative hearings are best suited for PCS licensing because there are effective means of reducing the administrative burden of such hearings and even reformed lotteries will be abused (even with postfiling safeguards) (24-27).

Regulatory status:

- PCS providers should have a federally protected right of interconnection at reasonable rates and terms no less favorable than those offered to any other LEC customer or carrier (27-28).
- Other LEC reforms are needed as a prerequisite to competition, such as mandatory cost-based network unbundling, number portability, co-carrier compensation, equal access to LEC signalling systems and informational databases, and reciprocal compensation for carrier-provided switching and termination functions (28).

Other issues:

• Cable television/telephone cross-ownership restrictions do not bar cable television entities from PCS participation, regardless of whether PCS is private or common carrier: the Act read as a whole was intended to prevent anticompetitive action by LECs, not cable companies; Section 533 explicitly recognizes the right of cable companies to offer common carrier services; the legislative history confirms that Congress envisioned cable companies competing with LECs; the history of the prohibition and Commission precedent confirm that cable companies may provide non-video services; PCS providers are not LECs within the meaning of the prohibition; and a non-LEC PCS provider is not a LEC (29-39).

CRICO COMMUNICATIONS CORPORATION Reply Comments on 2 GHz Licensed PCS

Interest: Small company operating common carrier one-way paging systems in Florida and California as well as SMR facilities (800 MHz band) in Florida

Service areas:

- Supports adoption of MCI consortium approach; urges Commission to adopt 40 MHz spectrum allocation and license three carriers in accordance with MCI proposal. (p. 2).
- States that licensing three national consortia, including local operators, would be equitable to applicants of all sizes, and provide the only way in which small firms could participate in new PCS industry. (pp. 2-3). Concurs with MCI that national licensing plan would encourage maximum ownership diversity and minority participation. (p. 3).

Licensing policies:

• Supports streamlined comparative evidentiary hearing for selecting consortia; MCI 10-point evaluation system will simplify comparative hearings so as not to burden Commission's staff while facilitating selection of qualified national licensee constituted in significant part by modest sized participants and minority participants. (pp. 3-4).

DBX CORPORATION

Reply Comments on 2 GHz Licensed PCS

Interest: Entrepreneurial telecommunications firm.

Band plan:

• In addition to licensing local PCS, the FCC should allocate spectrum for dbX's proposed Extended Network PCS, which would serve highly mobile users -- such as trucks -- that require extended access to uniform services at discrete locations across the nation. This proposal contemplates multiple Extended Network PCS providers. (pp. 6-7).

Amount of spectrum per licensed system:

- The use of spread spectrum technology can enable more than one provider to serve essentially the same area using the same spectrum. (p. 7).
- The FCC should allocate the same amount of spectrum for Extended Network PCS operations as it allocates to each local or regional PCS licensee. (p. 7-9).

Service areas:

- The FCC should reserve spectrum for an Extended Network PCS System to create a national, uniform mobile communications system. (pp. 2-4).
- The potential of PCS will not be realized if PCS is limited to local and regional systems. (pp. 4-5).

Licensing policies:

• The FCC should grant applications for extended network PCS on a first-come, first-served basis on the condition that applicants prove that their service proposals will not cause interference to other facilities. (pp. 9-10).

Regulatory status:

 As with satellite earth stations, the FCC should preempt state and local zoning regulation of Extended Network PCS base stations. (pp. 11-12).

Technical standards:

 The FCC should designate a standards committee, such as the IEEE, to propose technical standards for Extended Network PCS licenses. (pp. 8-9).

EAGLE TELEPHONE SYSTEM

Reply Comments on 2 GHz Licensed PCS

Interest: Small, rural local exchange carrier

Other:

• Supports comments filed by Clear Creek Mutual Telephone Company, et al. (establish smaller license areas for rural PCS; refrain from restricting the eligibility of LECs to provide PCS in rural areas or exempt rural telcos servicing areas of 10,000 or less from any general LEC restrictions; impose minimal regulation on PCS providers; and permit cooperative rural telephone companies to elect private carrier status for their PCS offerings) (1).

ELECTROMAGNETIC ENERGY POLICY ALLIANCEReply Comments on 2 GHz Licensed PCS

Interest: Association of users and manufacturers of equipment that emits nonionizing radio frequency energy.

Technical standards:

 A significant number of parties agreed that the FCC should use the IEEE/ANSI standard for radio frequency exposure. (pp. 1-2).

ELLENSBURG TELEPHONE COMPANY Reply Comments on 2 GHz Licensed PCS

Interest: Small, rural local exchange carrier

Other:

• Supports comments filed by Clear Creek Mutual Telephone Company, et al. (establish smaller license areas for rural PCS; refrain from restricting the eligibility of LECs to provide PCS in rural areas or exempt rural telcos servicing areas of 10,000 or less from any general LEC restrictions; impose minimal regulation on PCS providers; and permit cooperative rural telephone companies to elect private carrier status for their PCS offerings) (1).

ERICSSON CORPORATION

Reply Comments on 2 GHz Licensed PCS

Interest: Equipment manufacturer

Band plan:

• Supports allocation of 2 providers with either 20 or 40 MHz each due to the existing channelization of the band; the natural choice would be allocating 40 MHz each (4-5).

FLEET CALL, INC.

Reply Comments on 2 GHz Licensed PCS

Interest: Enhanced SMR provider

Band plan:

• 5 licensees with 20 MHz each (12-13).

Amount of spectrum per licensed system:

 Arguments for more than 20 MHz based on the presence of existing users ignore the Commission's work towards developing feasible transition measures; fail to show demand requiring massive allocations; and promote spectral inefficiency (13-14).

Service areas:

- Overwhelming consensus for MSA/RSA licensing; limited supported for other schemes with general agreement that the advantages (engineering or representation of commercial areas) are outweighed by restriction of entry opportunities (8-10).
- MSAs/RSAs are familiar to users and the financial community, well matched to technical and market characteristics of microcellular systems; and delays evident in cellular licensing were not the result of the market areas used (10-12).

Licensing policies:

Competitive bidding should be used to distribute licenses since lotteries are prone to speculation; lotteries are inappropriate when promoting innovative technologies (generally suitable only for "fungible" service proposals); and competitive bidding is the only means of assuring that licenses are obtained by those who value them the most (14-20).

Regulatory status:

- Notes that nearly all commenters support a federally protected right to interconnection with the PSTN, which should include existing and new providers (22-23).
- COmmission should preempt state and local regulation of the types of interconnection available to PCS licensees as well as the rates, terms and conditions of interconnection (23-24).
- Determination of a single regulatory classification for new providers is premature, and there may not be a single most

appropriate designation. Accordingly, Fleet Call supports a status election scheme allowing a licensee to select a status upon licensing (24-25).

Other issues:

- The Commission's NPRM and proposals fail to live up to the laudatory goals established when spectrum was set aside for Emerging Technologies to create new services, and a further NPRM should be issued that properly considers a regulatory framework for authorizing new services (4-8).
- Supports GTE's arguments that the NPRM fails to consider the impact of PCS on the telecommunications infrastructure (20-22).

GENERAL COMMUNICATION, INC.

Reply Comments on 2 GHz Licensed PCS

Interest: Not identified

Service areas:

 Supports MCI proposal to license three national consortia, with local operators building and operating systems. (pp. 1-2).

• States that national licensing approach will ensure speedy deployment of PCS on nationwide basis; cites national roaming, interoperability among local systems, technical standards, network services, national marketing, and reduced costs of preventing interference with existing microwave users as advantages of MCI consortium approach. (p. 2).

Licensing policies:

- Supports licensing of at least three national consortia via comparative hearing process on basis of criteria including identification of local system operators, ability to serve largest number of people, technical ability, service offerings, minority participation and pioneer preferences. (pp. 1-2).
- Criticizes lottery system, citing delayed deployment of PCS in less populated areas and encouragement of speculative and fraudulent applications. (p.2).

Local exchange carrier participation:

- Opposes common ownership of any PCS and cellular licenses within same geographic market, stating that competition would be stifled without creating offsetting benefits; LECs who do not hold cellular licenses (all or a percentage thereof) should be permitted to acquire PCS licenses as long as they provide interconnection to competing PCS licensees that is no less favorable than that provided to their own affiliates. (p. 3).
- States that LECs with cellular company interests should be prohibited from receiving a PCS license in that service area; opposes LEC set-aside for PCS, and states that cellular rules may be relaxed if necessary so that spectrum used for cellular can be used to offer PCS-type services. (p. 3).

Regulatory status:

• Supports federally protected, non-discriminatory right to interconnect with all providers, including LECs. (p. 3).

GTE CORPORATION

Reply Comments on 2 GHz Licensed PCS

Interest: Provider of local exchange and mobile service

Band plan:

• Continues to support total allocation of 100-120 MHz, as proposed by Commission. (pp. 3-4).

Amount of spectrum per licensed system:

- Reiterates support for authorization of five systems with allocation of 20 MHz each; notes that preponderance of commenters and OPP paper support this allocation as technically feasible, spectrally efficient, and fostering competition. (pp. 4-13).
- Rejects arguments that larger allocations are necessary to ensure competition with cellular, or are necessary to initiate operations while existing licensed microwave users remain in the bands. (pp. 8-13).

Service areas:

- Continues to support MSA/RSA licensing as maximizing competitive delivery and diversity; notes that MSA/RSA licensing is well-suited to highly localized nature of 2 GHz PCS operations, administratively convenient, and spectrally efficient. (pp. 29-31).
- Rejects larger service areas as thwarting diversity, slowing deployment, creating spectrum warehousing problems, and failing to respond to local needs. (pp. 31-34).
- States that MCI consortium proposal is ill-conceived and inconsistent with the Commission's PCS goals; plan excludes qualified entities and unjustifiably preempts market forces in favor of government regulation. States that national consortia are unlikely to increase speed of deployment, do not guarantee ubiquitous national service, prevent innovation and diversity, and do not advance competition. (pp. 34-38).

Cellular carrier participation:

 Emphasizes that cellular carriers should have full eligibility in all markets. (pp. 14-18).

• Cites OPP Paper in support of cellular participation, stating that it substantiates claims that eligibility restrictions on cellular will result in loss of production efficiencies, increasing cost of PCS to the public; also cites OPP Paper to support contentions that fears of anticompetitive behavior by cellular operators are unjustified and that cellular carriers' existing 25 MHz allocation is not sufficient for delivery of both cellular service and PCS. (pp. 25-27).

Local exchange carrier participation:

- Supports unrestricted LEC eligibility to promote universality, speed of deployment, diversity of services, and competitive delivery. (p. 19).
- States that OPP Paper recommends allowing local telephone companies full eligibility to provide PCS because economies of scope between telephone networks and PCS will lower initial costs of deploying PCS and encourage participation of smaller providers. (pp. 27-28).

Regulatory status:

- Continues to advocate regulatory parity for competing suppliers of telecommunications services to avoid distorting competition. (pp. 39-42).
- Views <u>AT&T v. FCC</u> decision as reinforcing need for immediate consideration of problem of regulatory parity because decision will have uneven impact on private and common carrier PCS offerings. (p. 42-43).

Other:

- Reiterates that Commission should move cautiously in the absence of reliable data on potential demand for PCS. (pp. 46-49).
- Asserts that Commission should establish clear guidelines delineating the relationship between PCS and existing communications networks; specifically, the Commission must define how PCS will integrate with landline telephone services, define its role vis-a-vis cellular service, and clarify policies underlying cable television entry into PCS. (pp. 49-54.

HOOD CANAL TELEPHONE COMPANY

Reply Comments on 2 GHz Licensed PCS

Interest: Small, rural local exchange carrier

Other:

• Supports comments filed by Clear Creek Mutual Telephone Company, et al. (establish smaller license areas for rural PCS; refrain from restricting the eligibility of LECs to provide PCS in rural areas or exempt rural telcos servicing areas of 10,000 or less from any general LEC restrictions; impose minimal regulation on PCS providers; and permit cooperative rural telephone companies to elect private carrier status for their PCS offerings) (1).

HORIZON CELLULAR GROUP

Reply Comments on 2 GHz Licensed PCS

Interest: RSA cellular operator.

Cellular carrier participation:

- Cellular operators should not be excluded from obtaining PCS licenses, either outside or within their existing cellular service areas. (p. 5).
- If the FCC accepts commenters' arguments for a set-aside for rural LECs, an equivalent set-aside is appropriate for rural cellular operators. (p. 5).

Local exchange carrier participation:

 The FCC should not set-aside spectrum for any entity, including LECs, because the applications of PCS are largely undefined. (p. 5).

Other:

- The FCC must adopt special rules for rural markets to nurture investment for the provision of PCS:
 - PCS should be gradually phased in to rural markets after the demand for various types of PCS implemented in metropolitan markets can be gauged. (pp. 2-3).
 - The FCC should initially introduce fewer than five licenses into smaller markets. (p. 4).

TOWN OF HUDSON LIGHT AND POWER DEPARTMENT Reply Comments on 2 GHz Licensed PCS

Interest: Electric utility

Licensing policies:

• Supports proposal of City Utilities of Springfield to set aside 10 MHz of spectrum for PCS use by utilities. PCS offers a promising means of establishing communications links with individual residences to allow the monitoring and management of utilities usage (e.g., by shutting off certain applicances). Wire, cable and microwave facilities cannot economically provide this service. Without a reserved allocation, utilities will not have a realistic opportunity to test and deploy PCS (2-3).

ILLINOIS CONSOLIDATED TELEPHONE COMPANY Reply Comments on 2 GHz Licensed PCS

Interest: Medium-sized local exchange carrier.

Band plan:

• Five providers with 20 MHz each. (p. 2).

Amount of spectrum per licensed system: 20 MHz.

Service areas:

- MSA/RSA boundaries are best for PCS because this will encourage the provision of PCS to rural areas. (pp. 2-3).
- Supports a separate national license for PCS in which all LECs are allowed to jointly participate, so long as all small and medium-sized LECs are assured that they will be allowed to offer PCS in their own local exchange areas. (p. 3).

Local exchange carrier participation:

- LECs should be eligible for a full block of spectrum, rather than a 10 MHz set-aside (pp. 1).
- LECs must be eligible to participate in PCS regardless of a minority interest in a cellular market. (p. 2).
- PCS will not be deployed rapidly, if at all, in rural areas unless LECs are eligible to provide such service. (p. 3).

Licensing policies:

• If a national license is adopted, the comparative hearing process should be used. (p. 4).

INTERDIGITAL COMMUNICATIONS CORPORATION Reply Comments on 2 GHz Licensed PCS

Interest: Manufacturer of wireless technology

Amount of spectrum per licensed system:

- 30 MHz of spectrum for PCS licensees is insufficient to accommodate PCS services. The potential for interference with incumbent users requires at least a 40 MHz allocation (and preferably 60 MHz). The OPP Paper confirms this, noting that potential microwave interference could be a reason for larger spectrum allocation size (2-5).
- A 30 MHz PCS allocation will also delay service and increase user costs. Because 2 GHz microwave users normally overlap two 30 MHz bands, competing PCS licensees will need to negotiate cost sharing prior to the relocation of existing users (3-4).
- The OPP Paper concludes that even 40 MHz might not be enough to permit full development of PCS applications. Adopting an allocation of less than 40 MHz would necessarily restrict the development of wideband CDMA for PCS (5-7).
- InterDigital has demonstrated that, by using direct sequence spread spectrum, the spectrum allocated to licensees can overlap by as much as 50% without significantly limiting performance. InterDigital has also demonstrated that the use of a single notch filter in the PCS mobile unit will permit a very high density of PCS users to operate in regions where microwave users operate. Accordingly, the Commission should consider issuing three PCS licenses, each having a transmit bandwidth of 30 MHz and a receive bandwidth of 30 MHz, with a 50% overlap (7-9).
- Rather than handicapping PCS systems by allocating 20 MHz licenses, InterDigital recommends that the Commission consider increasing the spectrum provided to cellular carriers to that eventually allocated to PCS licensees (10).

Service areas:

 Advocates three national consortia. States that the comments support national licensing as best method to provide access to PCS for all entities large and small (11-13).

Cellular carrier participation:

Emphasizes universal eligibility for all entities (11).

Local exchange carrier participation:

Emphasizes universal eligibility for all entities (11).

Licensing policies:

- If the Commission decides to issue PCS licenses for nonoverlapping bands, the Commission should reward with additional spectrum those licensees who use spectrum sharing techniques (9).
- Opposes conventional licensing methods in favor of formation of national consortia modeled on a general/limited partnership arrangement. Under this approach, all general partners would be permitted to build and operate the top fifteen markets and the limited partners would have preemptive rights to build and operate the rest of the markets. All capital paid into the partnership would be used first to pay to relocate existing users. MCI's proposal, while similar, does not envision the accumulation of a large capital base or incorporate a mechanism that allows all markets to build out simultaneously through "limited partnership/franchisee" arrangements. The licensing plan adopted must provide incentive to build out rural areas (11-13).

Technical standards:

Recommends that the the Commission request the IEEE Communications Society to establish a panel of university professors who are conducting research in PCS and related fields and that this panel provide a written and oral presentation to the Commission to respond to specific technical questions. The Commission should not ignore this major source of essential information (14-15).

INTERSTATE TELEPHONE COMPANY, VALLEY TELEPHONE COMPANY AND SHENANDOAH TELEPHONE COMPANY

Reply Comments on 2 GHz Licensed PCS

Interest: Local exchange telephone and cellular providers

Amount of spectrum per licensed system:

- The Commission should issue five licenses of 20 MHz each to assure the benefits of competition (5).
- The OPP Study suggests 20 MHz is sufficient to support a low cost PCS system (5).

Service areas:

- The Commission should issue two national licenses to consortia composed of a national manager and local operators. Such a national license would facilitate nationwide compatibility, take advantage of economies of scale, facilitate implementation and make PCS more competitive internationally (6-8).
- The remaining licenses should be issued to local entities operating within MSAs/RSAs. MSAs/RSAs are the only option that recognizes the inherent differences between metropolitan and non-metropolitan areas. These service areas are also more likely to encourage broader participation in PCS, diversity of service, and tailoring of service to meet local needs (11-12).

Cellular carrier participation:

- There should be no limitation on cellular carrier participation in PCS. Cellular carriers offer experience, expertise and existing infrastructures that would make them ideal providers of PCS (17-19).
- Also support liberalization of cellular rules to permit cellular licensees to provide PCS services within their existing cellular frequencies (19).

Local exchange carrier participation:

 LECs should have full access to PCS spectrum both inside and outside their service areas. Through their expertise and existing infrastructure, LECs will facilitate deployment of PCS (especially to rural areas) as well as enhance utilization of the PSTN by increasing its capability and efficiency. (12-17).

Licensing policies:

- Nationwide licensees should be chosen by a single streamlined comparative hearing. The formation of consortia would screen out less serious applicants and result in applications fewer in number and of higher quality (9-10).
- To minimize speculation, the Commission should adopt strict financial and technical qualifications showings, minimum construction commitments and deadlines, short filing windows, strict anti-trafficking rules, and significant filing fees (10).

LEWIS RIVER TELEPHONE COMPANY Reply Comments on 2 GHz Licensed PCS

Interest: Small, rural local exchange carrier

Other:

• Supports comments filed by Clear Creek Mutual Telephone Company, et al. (establish smaller license areas for rural PCS; refrain from restricting the eligibility of LECs to provide PCS in rural areas or exempt rural telcos servicing areas of 10,000 or less from any general LEC restrictions; impose minimal regulation on PCS providers; and permit cooperative rural telephone companies to elect private carrier status for their PCS offerings) (1).

Litel Telecommunications corporation d/b/a LCI INTERNATIONAL Reply Comments on 2 GHz Licensed PCS

Interest: Facilities-based interexchange carrier; conducted PCS testing pursuant to experimental authorization

Band plan:

 Advocates allocation of 200 MHz to five PCS licensees. (pp. 3-4).

Amount of spectrum per licensed system:

• Supports allocation of 40 MHz per licensee, stating that it is unclear whether 20-30 MHz is sufficient to support PCS given current operation of microwave licensees in the 2 GHz spectrum; moreover, spread spectrum operations require a greater amount of spectrum whether or not other users occupy the band. (p. 4).

Cellular carrier participation:

- Opposes cellular carrier participation because of anticompetitive dangers; states that cellular operators will have market power and incentive to cross-subsidize PCS activities with monopoly profits and discriminate against PCS competitors. (pp. 5-9).
- States that cellular operators already control substantial, exclusive block of spectrum; instead of providing these carriers with more, advocates introduction of new players to increase diversity of services and lower rates. (pp. 10-11).

Local exchange carrier participation:

- Opposes LEC and AT&T participation for similar reasons it opposes cellular carrier participation (see above). Cites market power of LECs and exploitation of monopoly status in support of exclusion. (pp. 5-12).
- States that, because of wireline set-aside in cellular market, LECs are doubly suspect; greater market concentration would result if LECs were allowed to provide PCS. (pp. 8-9).
- States that safeguards against abuse cannot completely deter anticompetitive conduct; anticompetitive activities are difficult to detect, even with diligent regulatory oversight. Therefore, advocates exclusion from PCS market, at least initially. (p. 9).